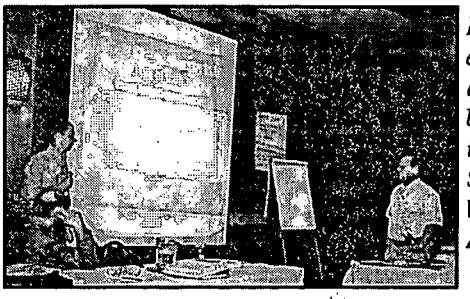
SUMMER 2001

THE ADVISOR

A Publication of the Rocky Flats Citizens Advisory Board

Board Co-Sponsors Stakeholder Workshop

In late April, the Rocky Flats Citizens Advisory Board (RFCAB), the Department of Energy (DOE), the Environmental Protection Agency (EPA), and the Colorado Department of Public Health and Environment (CDPHE) co-sponsored a stakeholder workshop on technical issues related to establishing soil action levels for Rocky Flats cleanup. The soil action levels are numerical values that will determine acceptable levels of plutonium contamination that can remain in the soil after cleanup is complete. The original announcement of these levels in 1996 by DOE and the regulatory agencies was met with great skepticism in the community. As reported in previous issues of *The Advisor*, Risk Assessment Corporation (RAC) conducted an independent assessment of the action levels beginning in 1998 and recommended a significantly lower number. Since last year, DOE and the regulators have been conducting their own assessment of the action levels. Because of the technical nature of the review, local community stakeholders, including RFCAB, asked DOE to conduct a community workshop.



Members of the expert panel discuss an issue being presented at the RSAL Stakeholder Workshop in April 2001.

During the two-day workshop, outside experts were invited to provide presentations and interact with DOE and agency representatives conducting the current assessment. The invited experts included Kathryn Higley, a health physicist and assistant professor at Oregon State University. Dr. Higley recently completed an assessment of health risk issues related to the cleanup of Johnston Atoll in the South Pacific, a site similar to Rocky Flats due to its plutonium soil contamination. Also participating were John Till, Kathleen Meyer, and Art Rood with RAC, the firm that conducted the original review of the action levels at Rocky Flats. The final member of the expert panel was Charley Yu, a principal investigator at Argonne National Laboratory in Chicago, Illinois. Dr. Yu is the developer of the RESRAD computer code used by DOE and the regulators to calculate the action levels. Members of the working group from DOE and the agencies tasked with developing revised soil action levels also participated in the workshop. They included John Rampe with DOE, Bob Nininger with site contractor Kaiser-Hill, Tim Rehder, Jim Benetti, and Susan Griffin with EPA, and Steve Gunderson with CDPHE.

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Say hello to our new logo. After seven years without an identifying look to call our own, this year the Board decided to develop and begin using its own logo and color scheme. We hope you like it as much as we do.

Highlights Inside:

Rocky Flats Updates

Stakeholder Workshop (continued from page 1)

The workshop agenda was structured in four parts. The first part provided background information on how computer models are used to calculate soil action levels. The second part built on the previous information while narrowing the focus more toward site-specific conditions and special circumstances found at Rocky Flats. The value of computer calculations depends greatly on how well they reflect the actual site conditions. These computer models are quite complex and require the operators to make many decisions. Part three of the workshop focused on a number of these key decision points, allowing the working group members to interact with and seek opinions from the outside experts. The workshop concluded by allowing each of the participants, both from the working group and the expert panel, to state what they learned and identify next steps for completing the soil action level review. Workshop attendees also provided their views.

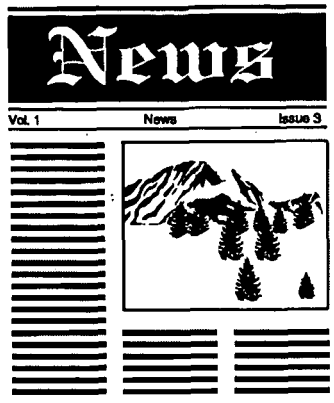
Overall, the workshop was well-received by the stakeholder attendees and participants. The working group representatives identified several key areas they will continue to explore to make certain the information they provide the computer models more accurately reflects conditions and circumstances at Rocky Flats.

To view a summary of the workshop, go to www.rfcab.org, and look under "Hot Topics."

Radionuclide Soil Action Level (RSAL) Review Progress

Nearly a year ago, the agencies agreed to reassess RSALs as part of the Rocky Flats Cleanup Agreement (RFCA) Annual Review. This scientific evaluation of RSALs was broken into five tasks, four of which are now substantially complete. Reports on Regulatory Analysis, Computer Model Evaluation, New Science, and Comparison to Cleanup Levels at Other Sites have all been issued. Only Task 3, Parameter Evaluation, remains unfinished. However, this is where the bulk of the work lies, and where the new RSALs may be announced.

The final selection of soil action levels is a policy decision, and the three agencies may fail to reach consensus even on scientific matters, much less the larger policy issues. Absent consensus, it is possible that EPA, CDPHE, and DOE personnel will end up recommending different RSALs to each of their respective decision-makers. This might trigger the RFCA dispute resolution process. Since the RSALs are a key component of the 903 Pad Decision Document, the agencies have a mutual interest in avoiding a lengthy dispute which could delay the 903 Pad Closure Project. The formal public comment period for the overall RSAL Review Report is slated for late summer.



Hand in Hand: Stewardship and Cleanup

The Stewardship Working Group submitted its report, *Hand in Hand: Stewardship and Cleanup*, to the Rocky Flats Citizens Advisory Board and the Rocky Flats Coalition of Local Governments in March 2001. The report looks at previous remediation decisions and evaluates them for stewardship implications. Specifically, the Solar Evaporation Ponds Groundwater Treatment System is used as the case study. The report suggests that improvements can be made during the remedy selection process and offers a mechanism called the "toolbox" as a solution. The toolbox consists of a matrix of questions and considerations that can be used by community and government leaders when evaluating remedial decisions presented by the site during the public comment period. The Rocky Flats Citizens Advisory Board forwarded a copy of the report to the Department of Energy in April.

A copy of the report can be downloaded at www.rfcab.org.

Natural Resource Management Issues

Wildlife Surveys Planned for 2001

Ecologists monitor wildlife for a variety of reasons: to ascertain baseline conditions, to inventory wildlife species, to identify potential impacts from human activities, etc. At Rocky Flats, the monitoring effort is year-round and is especially intensive during the spring. Thanks to a May snowstorm that interrupted fieldwork, RFETS ecologist Marcia Murdock graciously found time to talk with *The Advisor* about this season's field monitoring plan.

As in past years, considerable resources will be devoted to the Preble's Meadow Jumping Mouse, a species of interest because the U.S. Fish and Wildlife Service has listed it as threatened under the Endangered Species Act. Investigators will trap mice along the riparian habitat of Woman Creek in an effort to determine overwinter survival. Last year, a number of mice in the watershed were captured and tagged with a passive intermittent transponder (PIT). A device called a PIT-tag reader can be used to ascertain whether any individuals captured in the current year have been marked before.

One caveat with respect to mark-and-recapture studies is that they work best on abundant species. This is not the case for the Preble's mouse at RFETS. Past studies of relative abundance have indicated fewer than 100 individuals in the Woman Creek population. Last year's capture data illustrate the scarcity of these mice. Out of 4,620 trap-nights, only 22 individuals were captured along Woman Creek. As a population estimate, that translates to roughly 6.5 individuals per linear kilometer of stream. The lower the census estimate, the greater the uncertainty associated with it.

Another difficulty with using mark-and-recapture methods to estimate Preble's mouse survival is that the rodents are trap-shy. Baited with a horse-feed mixture of oats and molasses, the traps should represent easy forage for the mice. Even so, it is extremely difficult to recapture a Preble's mouse. Ms. Murdock speculates that, once caught, mice learn to recognize traps and subsequently avoid them.

This summer, site ecologists hope to determine what species of mammal is perpetuating structures known as burrow mounds. These pockets of habitat are believed to have originated as prairie dog towns. Now that plague has all but wiped out the local prairie dog population, other mammals appear to be using the burrows, but their identity remains unknown. Burrowing in the rocky soil prevalent at the site would seem to require a fairly large mammal. It is not a purely academic question, but one with implications for weed control. As the mystery rodents bring herbicide-free soil to the surface, the burrow mounds become a repository for noxious weeds.

In addition to the monthly surveys conducted from the roads, investigators perform annual walking surveys of significant species, a category which includes large game, carnivores, water fowl, raptors, rabbits, squirrels, muskrats, etc. The objective of these surveys is to identify trends. Are the populations of these significant species trending upward or downward? Or, for species such as the mountain

(continued on page 7)

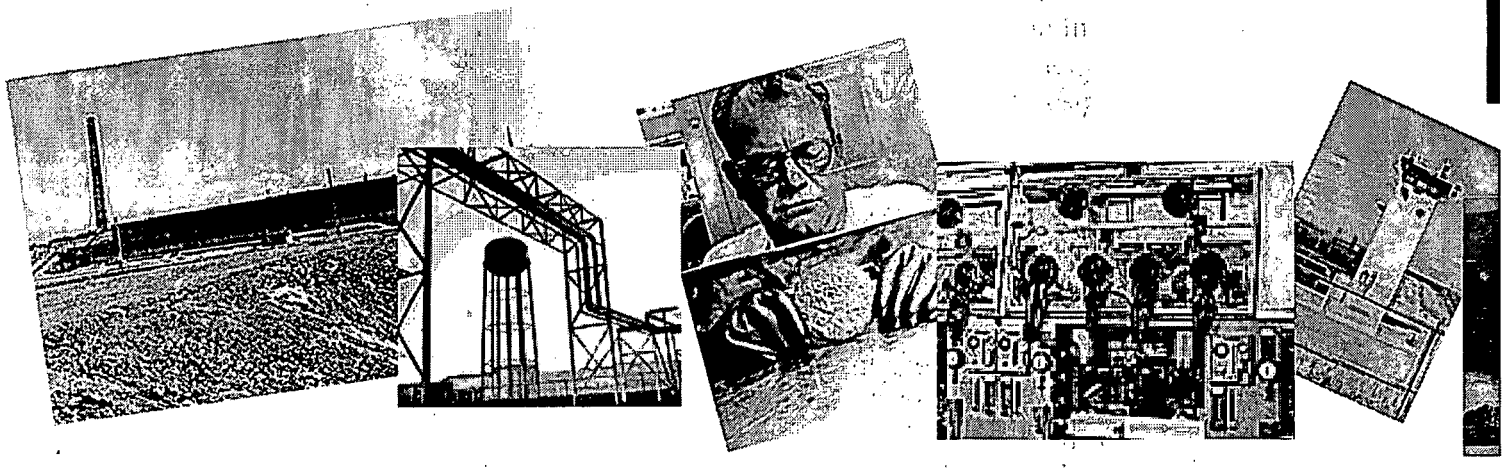
Cold War History and

Fifty years ago this July, the first buildings were constructed at Rocky Flats, merely six years after the United States dropped two atomic bombs on Hiroshima and Nagasaki in Japan. It was not that much earlier, August 2, 1939 in fact, that Albert Einstein wrote his infamous letter to President Franklin D. Roosevelt, warning him of the efforts in Nazi Germany to develop the world's first atomic bomb. As a result of the letter, President Roosevelt formed the Manhattan Project, a top-secret government mission to produce the first atomic bomb in the United States. Colonel Leslie R. Groves led the project and named J. Robert Oppenheimer, the son of a German immigrant, to be the lead scientist. Research and development began at the Los Alamos Laboratory in 1943. The Oak Ridge Laboratory in Tennessee and the Hanford Site in Washington were constructed at the same time for the purpose of producing weapons grade uranium and plutonium, respectively, to support the Manhattan Project.

Shortly after the war, President Truman signed the Atomic Energy Act of 1946. This act created the Atomic Energy Commission, which later became the Department of Energy. By this time, the Soviet Union had risen as a nuclear threat to the United States. In 1949, the Soviet Union detonated its first atomic bomb. The Atomic Energy Commission reacted feverishly. Soon an entire complex of national facilities, combined with the laboratories of the Manhattan Project, were formed, including the Rocky Flats Plant.

From 1953 to 1989, the Rocky Flats Plant manufactured the triggers used in nuclear weapons. The primary materials used in weapons production included plutonium, enriched uranium, depleted uranium, and beryllium. The product design and materials changed several times over the years. By 1960, Rocky Flats had become the sole producer of triggers in the United States and the plant had vastly expanded in size.

In 1957 and again in 1969, two major fires broke out in Buildings 771 and 776/777 respectively. Production activities did not stop as a result of the fires, but were continued in different buildings. Although the fires did not impact production, radiological contamination to Buildings 771 and 776/777 was extensive. Contaminated rooms, called "Infinity Rooms,"



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Pictured from left to right: (1) construction of Building 771 in 1951; (2) the most visible and notable feature at Rocky Flats, its w Building 776; (5) one of the guard towers within the Rocky Flats Protected Area; (6) nuclear weapons test - code name "Priscilla" on the railroad tracks leading into Rocky Flats, early 1970s; (9) a worker dons a supplied air suit prior to starting a decontamina among the primary inhabitants of the Rocky Flats site after its closure, provided legislation is passed in Congress turning Rocky

Rocky Flats: 50 Years

were sealed to protect employees. In fact, Building 771 was once labeled "the most dangerous building in America" by a national television news magazine.

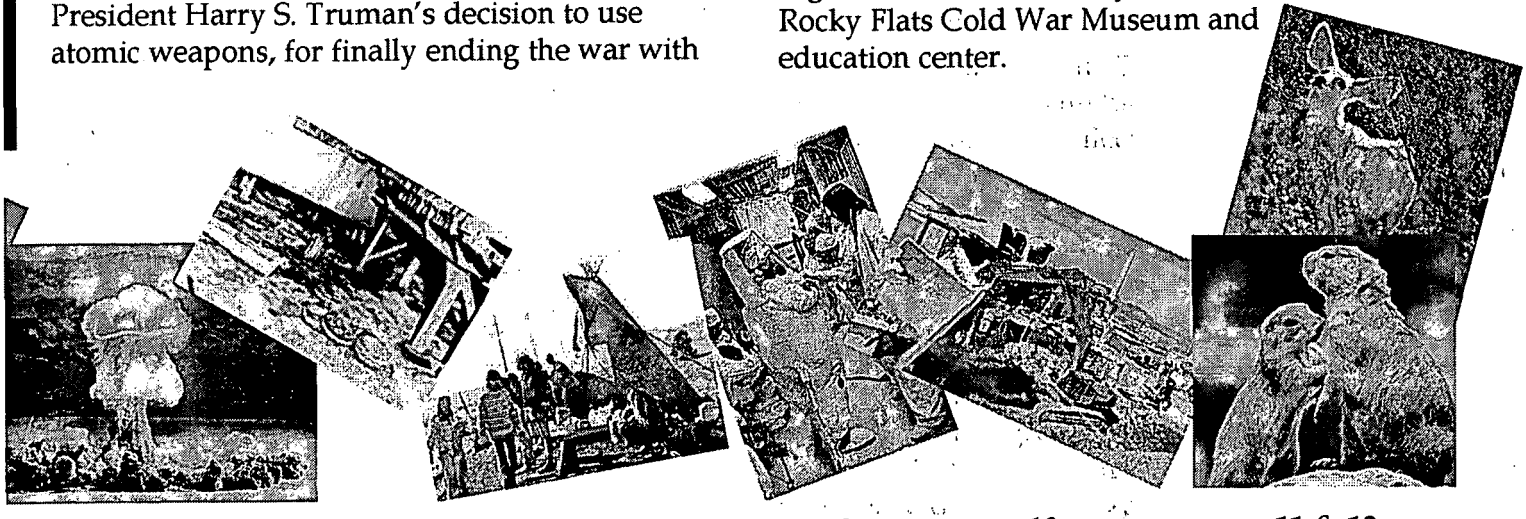
In 1989, the Federal Bureau of Investigation (FBI) raided the plant for violating environmental and safety laws. Production ceased, but the facility continued to improve its compliance record so that operations could resume. However, by 1992, the Cold War threat had diminished and production stopped completely. Rocky Flats had a new mission, environmental cleanup and waste removal.

The Department of Energy estimated the closed plant, now named the Rocky Flats Environmental Technology Site, would take approximately 25 years to cleanup. In 1996, a landmark report entitled "Accelerating Cleanup: Paths to Closure," changed the cleanup goal to 2006. It appears that the Rocky Flats site will be the first of the 13 nuclear weapons sites to close.

In all, Rocky Flats has experienced an exciting and sometimes tumultuous history. The entire Cold War legacy stirs controversy and passion in U.S. citizens, even today.

Some celebrate the Manhattan Project and President Harry S. Truman's decision to use atomic weapons, for finally ending the war with fewer fatalities than traditional methods of war. Others consider the bombing, and nuclear weapons production in general, to be horrific, comparable to the brutality of the Nazi gas chambers. Rocky Flats adopted this nuclear legacy in 1951, when the first production buildings were constructed. Protestors, reminiscent of the 1960s era, are a familiar sight at Rocky Flats. Conversely, the pride of the plant's nuclear contributions and environmental accomplishments are also apparent.

To commemorate the 50th Anniversary of Rocky Flats, Kaiser-Hill has embarked on an ambitious project to collect and record the institutional knowledge of the site, through video histories from retired and current employees, and through the collection of historic artifacts and memorabilia. Commemorative events are also scheduled. The Rocky Flats History Project Working Group meets monthly to discuss methods for preserving the institutional history of Rocky Flats. The group, which consists of community members, historians, local government officials, and employee representatives, is currently in the process of establishing a non-profit organization to eventually form a Rocky Flats Cold War Museum and education center.



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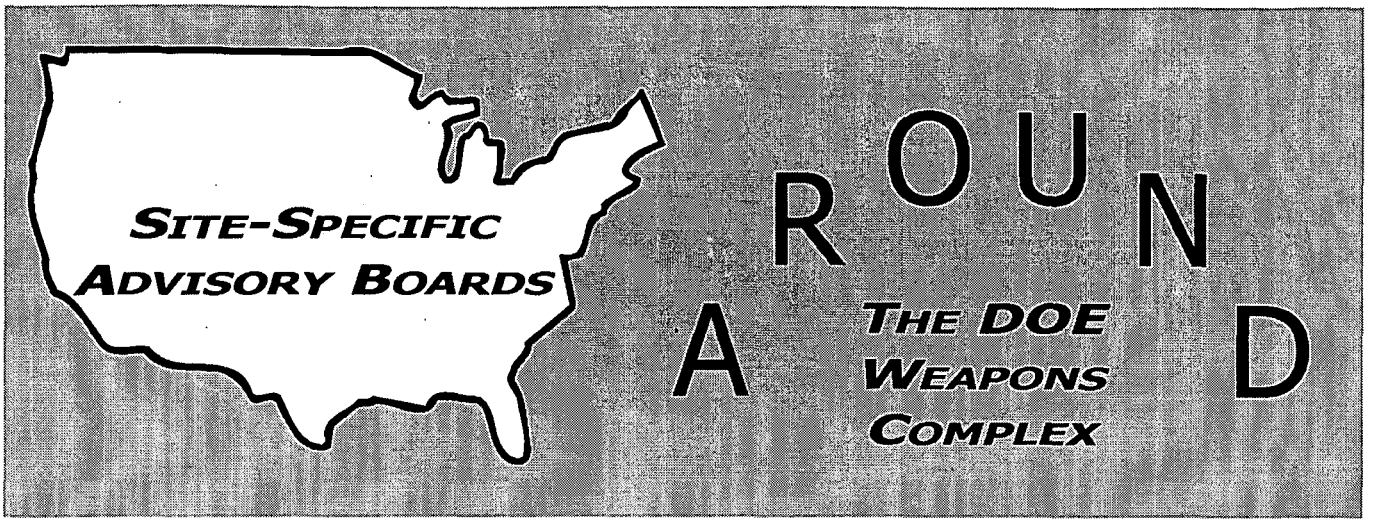
ater tower; (3) a worker with a plutonium button, used to make triggers for nuclear weapons; (4) a glovebox arrangement in " - performed at the Nevada Test Site in 1957; (7) Building 776/777 glovebox area after the fire in 1969; (8) protestors camped tion and decommissioning project; (10) the demolition of Building 779 in late 1999; (11 & 12) prairie dogs and deer will be Flats into a wildlife refuge.



This Issue: Savannah River Site Citizens Advisory Board

The Rocky Flats Citizens Advisory Board is one of several Site-Specific Advisory Boards (SSABs) that have been formed at former nuclear weapons production sites. In each issue of The Advisor, we spotlight the activities of one of these boards.

The Savannah River Site (SRS) in South Carolina includes 310 square miles of land bordering the Savannah River. Ten percent of the site property is developed for DOE operations. The remaining land consists of hardwood and pine forest, lakes, streams, bays, and other wetlands. The ecology is diverse and includes numerous species of plants and animals such as deer, wild hogs, turkeys, alligators, snakes, and wood storks. Environmental protection of this area is a critical mission of the site.

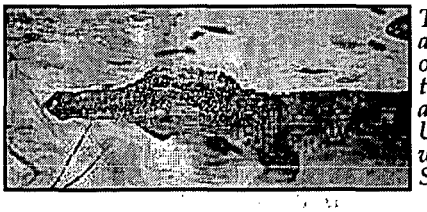
SRS began operating in the early 1950s for the primary purpose of producing the basic materials for building nuclear weapons, tritium and plutonium 239. Five nuclear reactors, two chemical separation plants, a heavy water extraction tower, a nuclear fuel and target fabrication facility, and waste management facilities were constructed to support SRS operations. About 35,000 million gallons of high-level radioactive waste were generated during the production years. Although the five reactors have since been closed and production of materials has ceased, tritium continues to be recycled and reloaded at SRS to ensure that the nation's supply is always available for nuclear weapons production.

The site also serves as a storage facility of high-level radioactive waste for the entire DOE nuclear weapons complex. The Defense Waste Processing Facility stabilizes the radioactive elements of the waste in borosilicate glass to prepare for packaging.

The Citizens Advisory Board (CAB) consists of 25 board members from South Carolina and Georgia. Members come from various business, community, environmental, academia, and local governmental organizations. In addition, two Board members represent economically disadvantaged persons, since environmental justice issues are a concern to the communities near the site. The Board has committees on waste management, environmental remediation, nuclear materials, and strategic and long-term issues.

The Board has been extremely busy in recent months, producing an estimated two to three recommendations per meeting. The CAB meets at least quarterly and approves recommendations by majority vote. The recommendations are directed at DOE, EPA Region 9, and the South Carolina Department of Health and Environmental Control.

The CAB approved two recommendations in January regarding tank cleaning and alternatives to proposed low-level waste treatment. One addressed a problem with the high-level liquid waste that has been accumulating in the secondary containment of the waste storage tanks. Presently the site has not budgeted or planned for the removal of accumulated liquids. The Board recommended the site develop, test, and plan for removal of this material by 2007. Another recommendation addressed DOE-proposed technologies for treating PUREX waste. The CAB recommended that alternative technologies, such as onsite incineration, be given additional consideration by DOE.

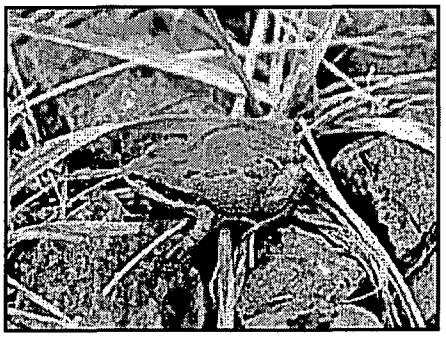


The American Alligator, a threatened species, is one of 59 species of reptiles and 42 species of amphibians recorded in Upper Three Runs Creek, which runs through the Savannah River Site.

Wildlife Surveys (continued from page 3)

lion, the objective might be to confirm unofficial sightings reported by night guards and other site personnel.

One might expect survey activity to be focused strictly on the buffer zone, but that is not necessarily the case. Some of the migratory bird surveys involve a comparison between unaffected grassland and the industrial area to see if there are differences in the use of these areas. How will species that currently use the industrial area, such as swallows and English sparrows, fare beyond closure? Since reclaimed grassland is the projected end-state for the industrial area, one way of getting at this question is to survey reclaimed prairie located in the southeastern end of the buffer zone for the species of interest.



A Boreal chorus frog spotted at Rocky Flats.

This monitoring may not seem overly ambitious, but for a staff of three ecologists, it constitutes a great deal of work, much of which has to be done in a relatively brief period of time. Preble's mice, for example, do not withstand trapping in the heat of summer. Likewise, breeding surveys of migratory birds must be completed within a narrow window of opportunity.

To see the results of last year's surveys, check out the Year 2000 Annual Wildlife Report, which is due to be released by the time the newsletter goes to press. It will be available on the web at:

www.rfets.gov
click on Environmental Data, Ecology, and then Annual Monitoring Reports

Spotlight on our Newest Board Member

Maureen Eldredge is a resident of Lyons in Boulder County who recently relocated to Colorado from Washington, DC. She worked in Washington on nuclear weapons production and cleanup issues with the Alliance for Nuclear Accountability, and served as a member of DOE's Environmental Management Advisory Board, where she was a member of the subcommittee on public participation and stewardship. Maureen also worked with the Center for Marine Conservation, and the National Oceanic and Atmospheric Administration in Washington, DC. She has a BA in Biology and an MA in Marine Affairs. Maureen will serve as a community representative.

RFCAB Website: *www.rfcab.org*

The Advisor is published quarterly by the Rocky Flats Citizens Advisory Board (RFCAB). The Executive Editor is Jerry DePoorter. Please send your questions, suggestions and ideas to:

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Except as noted, all articles are written by RFCAB staff: Ken Korkia, Deb Thompson, Noelle Stenger, and Jerry Henderson. To request a change of address or to add or remove your name from the mailing list, contact Deb Thompson at the above address and phone number. Material may be reprinted if credit is given. RFCAB is funded under a 2001 grant of approximately $350,000 sponsored by the U.S. Department of Energy.

RFCAB MISSION STATEMENT

The Rocky Flats Citizens Advisory Board, a nonpartisan, broadly representative, independent advisory board with concerns related to Rocky Flats activities, is dedicated to providing informed recommendations and advice to the agencies (Department of Energy, Colorado Department of Public Health and Environment and the Environmental Protection Agency), government entities and other interested parties on policy and technical issues and decisions related to cleanup, waste management and associated activities. The Board is dedicated to public involvement, awareness and education on Rocky Flats issues.

Rocky Flats Public Meeting Calendar

July			
9	Rocky Flats Coalition of Local Governments	8 to 11 a.m.	Jeffco Airport
11	RFCA Stakeholder Focus Group	3:30 to 6:30 p.m.	Broomfield City Hall
12	Rocky Flats Citizens Advisory Board Meeting	6 to 9:30 p.m.	Broomfield City Hall
17	Environmental Restoration/D&D Status Meeting	3 to 5 p.m.	Location TBD
25	RFCA Stakeholder Focus Group	3:30 to 6:30 p.m.	Broomfield City Hall
26	Stewardship Working Group	5:30 to 7:30 p.m.	Arvada City Hall
August			
1	Rocky Flats History Project	5 to 6:30 p.m.	Arvada City Hall
2	Rocky Flats Citizens Advisory Board Meeting	6 to 9:30 p.m.	Broomfield City Hall
6	Rocky Flats Coalition of Local Governments	8 to 11 a.m.	Jeffco Airport
8	RFCA Stakeholder Focus Group	3:30 to 6:30 p.m.	Broomfield City Hall
22	RFCA Stakeholder Focus Group	3:30 to 6:30 p.m.	Broomfield City Hall
23	Stewardship Working Group	5:30 to 7:30 p.m.	Arvada City Hall
September			
5	RFCA Stakeholder Focus Group	3:30 to 6:30 p.m.	Broomfield City Hall
6	Rocky Flats Citizens Advisory Board Meeting	6 to 9:30 p.m.	Broomfield City Hall
10	Rocky Flats Coalition of Local Governments	8 to 11 a.m.	Jeffco Airport
19	RFCA Stakeholder Focus Group	3:30 to 6:30 p.m.	Broomfield City Hall
27	Stewardship Working Group	5:30 to 7:30 p.m.	Arvada City Hall

ALL MEETINGS ARE SUBJECT TO CHANGE, PLEASE CALL BEFORE YOU GO: (303) 420-7855

Arvada City Hall, 8101 Ralston Road, Arvada
Broomfield City Hall, One Descombes Drive, Broomfield
Jefferson County Airport Terminal Building, Mount Evans Room, 11755 Airport Way, Broomfield
RFCAB office, 9035 North Wadsworth Parkway, Suite 2250, Westminster

Rocky Flats Citizens Advisory Board
9035 Wadsworth Parkway, Suite 2250
Westminster, CO 80021

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